

What is claimed is:

1. A system, comprising:

a server programmed to store electronic tag data constructs in association with a virtual wall data construct stored in the server;

a short-range wireless access point connected to the server, the access point located at a place; and

a mobile short-range wireless device programmed to enable its user to create an electronic tag data construct containing an identity of the user and associated with a multimedia message, the device programmed to send the electronic tag over a short-range wireless link to the access point for association with the virtual wall data construct in the server to enable viewing the electronic tag by other users with short-range wireless viewing devices.

2. The system of claim 1, which further comprises:

pointing controls in the user's short-range wireless device to enable the user to browse tags that have been posted on the virtual wall of the server.

3. The system of claim 1, which further comprises:

an editing program in the user's short-range wireless device to enable the user to write text, create an audio record or an image record and append it to the text, to create a multimedia message as the content of an electronic tag.

4. The system of claim 3, which further comprises:

said editing program incorporating the multimedia message into the electronic tag.

5. The system of claim 3, which further comprises:

said editing program referencing the multimedia message by a pointer contained in the electronic tag.

6. The system of claim 3, which further comprises:

said editing program uniquely associating in the electronic tag, the user's identity with the multimedia message by prohibiting alteration of the message content after the user completes its creation.

7. The system of claim 6, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "false" during the period when the user is creating the message content.

8. The system of claim 7, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "true" when the user completes editing the content of the message, thereby freezing the content to prevent subsequent viewers from authentically attributing any modification of the content to the original user.

9. The system of claim 8, which further comprises:

said editing program writing a hop count value of zero into the electronic tag when the original user has created the content.

10. The system of claim 9, which further comprises:

a tag uploading program in the user's short-range wireless device for incrementing the hop count value when the user uploads the electronic tag to the server and writes the tag in association with the virtual wall data construct.

11. The system of claim 10, which further comprises:

a tag downloading program in the server for incrementing the hop count in an electronic tag whenever a user downloads a copy of the tag from the server.

12. The system of claim 9, which further comprises:

a tag transmitting program in the in the user's short-range wireless device for incrementing the hop count by one when the user sends a copy of the electronic tag to another user's short range wireless device.

13. The system of claim 1, which further comprises:

a cellular telephone circuit in the user's mobile short-range wireless device capable of sending multimedia messages, to forward content of the multimedia message over a telephone infrastructure network to other cellular telephones.

14. The system of claim 1, which further comprises:

said server programmed to store electronic tag data constructs in association with two dimensional X,Y coordinates representing a virtual wall data construct stored in the server.

15. The system of claim 14, which further comprises:

pointing controls in the user's short-range wireless device to enable the user to browse tags that have been posted on the virtual wall of the server, by moving a field of view over the two dimensional X,Y coordinates representing the virtual wall data construct.

16. The system of claim 1, which further comprises:

said short-range wireless devices are implemented as wireless personal area network (PAN) devices.

17. The system of claim 1, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

18. The system of claim 1, which further comprises:

said short-range wireless devices are implemented as IEEE 802.11 Wireless LAN devices.

19. The system of claim 1, which further comprises:

said short-range wireless devices are implemented as HIPERLAN devices.

20. The system of claim 1, which further comprises:

said multimedia message can be created or modified off line and then stored in the user's mobile device.

21. The system of claim 3, which further comprises:

said editing program uniquely associating the user's identity with the multimedia message, as an originating user;

said editing program setting a content-originator flag (CFG) value in the tag to "false" during a period when the user is creating or modifying the message content;

said editing program setting the content-originator flag (CFG) value to "true", thereby making permanent the association of the message content with the user's identity, when the user completes editing the message;

whereby subsequent viewers of the content can make a copy of the content, but they cannot authentically attribute the modified copy to the originating user.

22. The system of claim 3, which further comprises:

said editing program including the user's international mobile subscriber identity (IMSI) or mobile station ISDN number (MSISDN) in the tag.

23. The system of claim 1, which further comprises:

said server is connected to a Bluetooth access point located at a frequent gathering place, such as a famous landmark, a shopping center, a school, or a home.

24. The system of claim 1, which further comprises:

said mobile Bluetooth device is programmed to enable the user to create tags that contain multimedia messages that are typically aphorisms, notes, jokes, and the like.

25. The system of claim 24, which further comprises:

said multimedia messages may be previously prepared or spontaneously create.

26. The system of claim 1, which further comprises:

pointing controls in the user's short-range wireless device to enable the user to browse tags that have been posted on the virtual wall of the server by viewing a list downloaded from the server, listing the tags stored in the server.

27. The system of claim 1, which further comprises:

searching controls in the user's short-range wireless device to enable the user to perform a database search for tags using a query specifying particular IMSI or MSISDN values or user names.

28. The system of claim 27, which further comprises:

said server downloading a list of the tags stored in the server having the particular IMSI or MSISDN values or user names.

29. The system of claim 28, which further comprises:

said mobile device storing old tags having the IMSI or MSISDN values or user names, which are extracted from those tags and used as the query sent to the server.

30. The system of claim 1, which further comprises:

a database in the server that stores information about each tag in the server, in a tag record.

31. The system of claim 30, which further comprises:

said tag record including information contained in the corresponding tag, to enable searches to be made on the author's name, IMSI or MSISDN identity, time that the tag was recorded, and the like.

32. The system of claim 30, which further comprises:

said tag record including a field that links the tags forward or backward, if they are part of a sequence of user comments in tags that have been recorded in the server.

33. The system of claim 1, which further comprises:

a remote, backup server coupled to the first said server, which stores a copy of at least some of the tags and the database, to be used in the event of disaster recovery.

34. The system of claim 1, which further comprises:

a remote, backup server coupled to the first said server, to provide an accessible, bulk storage for old tags, to reduce the storage requirements on the first said server.

35. The system of claim 3, which further comprises:

said editing program writing a hop count value of zero into the tag when the original user has created the content in the mobile device;

said mobile device incrementing the hop count if the user uploads the tag to the server;

said server incrementing the hop count when a later user downloads a copy of the tag from the server.

36. The system of claim 3, which further comprises:

said mobile device incrementing the hop count if the user sends a copy of the tag to another user.

37. The system of claim 3, which further comprises:

said editing program writing a person-to-person flag (PPF) in the tag, indicating that the tag has been only transferred from person to person and has not been downloaded from the server.



38. The system of claim 3, which further comprises:

said editing program freezing the content of the tag so that later viewers cannot attribute a modification of the content to the original user.

39. The system of claim 38, which further comprises:

said editing program appending to the tag a message authentication code (MAC) hash value on the content of the tag and a digital signature of the originating party.

40. The system of claim 1, which further comprises:

a cellular telephone coupled to said mobile device, to transmit the multimedia content of a tag over a cellular telephone network to cellular telephones capable of receiving multimedia files.

41. The system of claim 1, which further comprises:

said mobile device sends a tag to recipient's mobile device in a "tag delivery" mode, wherein the sending device transfers a copy of the tag in the sender's device, causing the hop count to be incremented by one in the copy of the tag received by the recipient's mobile device.

42. The system of claim 1, which further comprises:

said mobile device sends a tag to recipient's mobile device in a "tag give-away" mode, wherein the sending device transfers the tag currently in the sender's device, causing the hop

count to remain unchanged in the tag received by the recipient and the sender's device keeps a copy of the tag, and the copy in the sender's device has its ho count incremented by one.

43. The system of claim 1, which further comprises:

said server programmed to store the tags in association with two dimensional X,Y coordinates, in a tag storage in the server.

44. The system of claim 43, which further comprises:

said mobile device programmed to browse tags that have been stored in the server, by using up/down and left/right controls of the mobile device.

45. The system of claim 1, which further comprises:

said mobile device programmed to send a charge authorizing message to an account charging server before said mobile device is permitted to upload a tag to the first said server.

46. The system of claim 45, which further comprises:

a cellular telephone coupled to said mobile device, to send an SMS message with the charge authorizing message over a cellular telephone network to the account charging server before said mobile device is permitted to upload a tag to the first said server.

47. The system of claim 46, which further comprises:

said cellular telephone coupled to said mobile device, receiving a second SMS message with a payment token over the cellular telephone system, to enable the mobile device to upload a tag to the first said server.

48. The system of claim 1, which further comprises:

a digital rights management (DRM) module in said mobile device sending digital rights management (DRM) authorization message over a network to a DRM account charging server, to make a payment before the mobile device is allowed to download a tag from the first said server.

49. The system of claim 1, which further comprises:

a payment accumulator in the mobile device, to accumulate a plurality of charges for downloading a plurality of tags from the server;

said payment accumulator sending a message to an account charging server, authorizing the user's account to be charged.

50. The system of claim 1, which further comprises:

a digital rights management (DRM) module in said mobile device for receiving payment from a requesting mobile device, before transferring a tag to the requesting mobile device.

51. The system of claim 1, which further comprises:

said mobile device automatically transferring a tag to another mobile device when they are within communications range.

52. The system of claim 1, which further comprises:

said mobile device automatically transferring a tag to the server when they are within communications range.

53. The system of claim 1, which further comprises:

said mobile device automatically transferring a tag to another mobile device when they are within communications range, as a "tag worm", wherein the tag automatically propagates from one mobile device to another mobile device.

54. The system of claim 1, which further comprises:

said server being located in the user's home, as a "personal or family tag storage".

55. The system of claim 54, which further comprises:

said server programmed to check a MSISDN identity of the mobile device storing the tags.

56. The system of claim 54, which further comprises:

said server programmed to enable the user to store and retrieve the user's tags without changing the hop counts in the tags.

57. The system of claim 54, which further comprises:

said server programmed to prohibit an unauthorized person or mobile device from retrieving the user's tags.

58. The system of claim 54, which further comprises:

said server programmed to increment a hop count value of the user's tags retrieved by an unauthorized person or mobile device.

59. The system of claim 54, which further comprises:

said short-range wireless devices are implemented as wireless personal area network (PAN) devices.

60. The system of claim 54, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

61. A method for a short-range wireless network, comprising:

storing electronic tag data constructs in association with a virtual wall data construct stored in a server connected to a short-range wireless access point located at a place;

receiving an electronic tag data construct containing an identity of the user and associated with a multimedia message from a mobile short-range wireless device programmed to enable its user to create the electronic tag; and

associating the received electronic tag data construct with the virtual wall data construct in the server to enable viewing the electronic tag by other users with short-range wireless viewing devices.

62. The method of claim 61, which further comprises:

enabling the user to browse tags that have been posted on the virtual wall of the server.

63. The method of claim 61, which further comprises:

enabling the user to write text, create a voice clip and append it to the text, take a digital picture and append it to the text, to create a multimedia message as the content of an electronic tag.

64. The method of claim 63, which further comprises:

said editing program incorporating the multimedia message into the electronic tag.

65. The method of claim 63, which further comprises:

said editing program referencing the multimedia message by a pointer contained in the electronic tag.

66. The method of claim 63, which further comprises:

said editing program uniquely associating in the electronic tag, the user's identity with the multimedia message by prohibiting alteration of the message content after the user completes its creation.

67. The method of claim 66, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "false" during the period when the user is creating the message content.

68. The method of claim 67, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "true" when the user completes editing the content of the message, thereby freezing the content to prevent subsequent viewers from authentically attributing any modification of the content to the original user.

69. The method of claim 68, which further comprises:

said editing program writing a hop count value of zero into the electronic tag when the original user has created the content.

70. The method of claim 69, which further comprises:

incrementing the hop count value when the user uploads the electronic tag to the server and writes the tag in association with the virtual wall data construct.

71. The method of claim 70, which further comprises:

incrementing the hop count in an electronic tag whenever a user downloads a copy of the tag from the server.

72. The method of claim 71, which further comprises:

incrementing the hop count by one when the user sends a copy of the electronic tag to another user's short range wireless device.

73. The method of claim 61, which further comprises:

forwarding content of the multimedia message over a telephone infrastructure network to other cellular telephones.

74. The method of claim 61, which further comprises:

storing electronic tag data constructs in association with two dimensional X,Y coordinates representing a virtual wall data construct stored in the server.

75. The method of claim 63, which further comprises:

writing a person-to-person flag (PFG) in the tag, indicating that the tag has been only transferred from person to person and has not been downloaded from the server.

76. A business method for a short-range wireless network, comprising:

storing electronic tag data constructs in association with a virtual wall data construct stored in a server associated with located at a place;

enabling a mobile short-range wireless device to create a new electronic tag data construct containing an identity of a user and associated with a multimedia message;

receiving the new electronic tag data construct at the server;

associating the new electronic tag data construct with the virtual wall data construct in the server; and



enabling viewing of the new electronic tag data construct by other users with short-range wireless viewing devices.

77. A mobile short-range wireless device, comprising:

a processor; and

a memory coupled to the processor, programmed to enable creating an electronic tag data construct containing an identity of a user and associated with a multimedia message, the memory further programmed to send the electronic tag over a short-range wireless link to an access point for association with a virtual wall data construct in a server to enable viewing the electronic tag by other users with short-range wireless viewing devices.

78. The device of claim 77, which further comprises:

pointing controls in the user's short-range wireless device to enable the user to browse tags that have been posted on the virtual wall of the server.

79. The device of claim 77, which further comprises:

an editing program in the user's short-range wireless device to enable the user to write text, create an audio record or an image record and append it to the text, to create a multimedia message as the content of an electronic tag.

80. The device of claim 79, which further comprises:

said editing program incorporating the multimedia message into the electronic tag.

81. The device of claim 79, which further comprises:

said editing program referencing the multimedia message by a pointer contained in the electronic tag.

82. The device of claim 79, which further comprises:

said editing program uniquely associating in the electronic tag, the user's identity with the multimedia message by prohibiting alteration of the message content after the user completes its creation.

83. The device of claim 82, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "false" during the period when the user is creating the message content.

84. The device of claim 83, which further comprises:

said editing program setting a content-originator flag (CFG) value in the electronic tag to "true" when the user completes editing the content of the message, thereby freezing the content to prevent subsequent viewers from authentically attributing any modification of the content to the original user.

85. The device of claim 84, which further comprises:

said editing program writing a hop count value of zero into the electronic tag when the original user has created the content.

86. The device of claim 85, which further comprises:

a tag uploading program in the user's short-range wireless device for incrementing the hop count value when the user uploads the electronic tag to the server and writes the tag in association with the virtual wall data construct.

87. The device of claim 86, which further comprises:

a tag downloading program in the server for incrementing the hop count in an electronic tag whenever a user downloads a copy of the tag from the server.

88. The device of claim 85, which further comprises:

a tag transmitting program in the in the user's short-range wireless device for incrementing the hop count by one when the user sends a copy of the electronic tag to another user's short range wireless device.

89. The device of claim 77, which further comprises:

a cellular telephone circuit in the user's mobile short-range wireless device capable of sending multimedia messages, to forward content of the multimedia message over a telephone infrastructure network to other cellular telephones.

90. The device of claim 77, which further comprises:

said short-range wireless devices are implemented as wireless personal area network (PAN) devices.

91. The device of claim 77, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

92. The device of claim 77, which further comprises:

said short-range wireless devices are implemented as IEEE 802.11 Wireless LAN devices.

93. The device of claim 77, which further comprises:

said short-range wireless devices are implemented as HIPERLAN devices.

94. A method for use in a short-range wireless communications network and in a long-range wireless communications network, for communicating a multimedia signal, comprising:

generating a short-range wireless tag signal for transmission in said short-range wireless network;

generating a header signal in said tag signal, including an identity of a user;

generating a multimedia message signal in said tag signal;

sending said short-range wireless tag signal in said short-range wireless network; and

extracting said multimedia message signal from said short-range wireless tag signal to enable sending said multimedia message signal in said long-range wireless communications network.

95. The method of claim 94, further comprising:

said short-range wireless tag signal associating with a virtual wall data construct in a server receiving said short-range wireless tag signal;

whereby said short-range wireless tag signal can be viewed by users with short-range wireless viewing devices.

96. The method of claim 94, further comprising:

said multimedia message signal including text, an audio record or an image record append to the text, creating a multimedia message as the content of the electronic tag signal.

97. The method of claim 94, further comprising:

said header signal prohibiting alteration of the message content after a user completes its creation.

98. The method of claim 94, further comprising:

said header signal including a content-originator flag (CFG) value of "false" during a period when a user is creating the message content.

99. The method of claim 98, further comprising:

said header signal including a content-originator flag (CFG) value of "true" when the user completes editing the content of the message, thereby freezing the content to prevent subsequent viewers from authentically attributing any modification of the content to the original user.

100. The method of claim 94, further comprising:

said header signal including a hop count value of zero when an original user has created the content.

101. The method of claim 94, further comprising:

said header signal including a hop count value greater than zero when a user uploads the electronic tag to a server and writes the tag in association with a virtual wall data construct.

102. The method of claim 101, further comprising:

said header signal including an incremented hop count value whenever a user downloads a copy of the tag from the server.

103. The method of claim 94, further comprising:

said header signal including a hop count value greater than zero when a user sends a copy of the electronic tag to another user's short range wireless device.

104. The system of claim 1, which further comprises:

a queuing management system program in the server, for establishing a queue of a plurality of customers waiting for service, each customer having a mobile short-range wireless device;

at least two of said plurality of customers sending a respective electronic tag data construct over a short-range wireless link to the access point for registering the customer as being on a virtual queuing line established by the queuing management system program.

105. The system of claim 104, which further comprises:

said queuing management system program in the server notifying a customer registered on said virtual queuing line that it is his/her turn in the queue.

106. The system of claim 105, which further comprises:

said notifying being by a notification message sent over said short-range wireless link from said access point to the customer's mobile short-range wireless device.

107. The system of claim 105, which further comprises:

said notifying being by a notification message sent over a network connected to said server, the notification message being sent via a second short-range wireless access point connected to the network, the second short-range wireless access point sending the notification message over a short-range wireless link to the customer's mobile short-range wireless device.

108. The system of claim 105, which further comprises:

said notifying being by a notification message sent over a telephone network connected to said server, the notification message being sent via a cellular telephone access point connected to the telephone network, the cellular telephone access point sending the notification message over a cellular telephone wireless link to the customer's cellular telephone.

109. The system of claim 108, which further comprises:

said notification message sent over the cellular telephone wireless link to the customer's cellular telephone is an SMS message.

110. The system of claim 104, which further comprises:

said server returning a second tag to the customer that is an advertisement message of the business, after the customer has registered with the server.

111. The system of claim 104, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

112. The system of claim 104, which further comprises:

said short-range wireless devices are implemented as IEEE 802.11 Wireless LAN devices.

113. The system of claim 104, which further comprises:

said short-range wireless devices are implemented as HIPERLAN devices.



114. The method of claim 61, which further comprises:

establishing a queue of a plurality of customers waiting for service using a queuing management system program in the server, each customer having a mobile short-range wireless device;

sending a respective electronic tag data construct from at least two of said plurality of customers over a short-range wireless link to the access point, for registering the customer as being on a virtual queuing line established by the queuing management system program.

115. The method of claim 114, which further comprises:

notifying a customer registered on said virtual queuing line that it is his/her turn in the queue, using said queuing management system program in the server.

116. The method of claim 115, which further comprises:

said notifying being by a notification message sent over said short-range wireless link from said access point to the customer's mobile short-range wireless device.

117. The method of claim 115, which further comprises:

said notifying being by a notification message sent over a network connected to said server, the notification message being sent via a second short-range wireless access point connected to the network, the second short-range wireless access point sending the notification message over a short-range wireless link to the customer's mobile short-range wireless device.

118. The method of claim 115, which further comprises:

said notifying being by a notification message sent over a telephone network connected to said server, the notification message being sent via a cellular telephone access point connected to the telephone network, the cellular telephone access point sending the notification message over a cellular telephone wireless link to the customer's cellular telephone.

119. The method of claim 118, which further comprises:

said notification message sent over the cellular telephone wireless link to the customer's cellular telephone is an SMS message.

120. The method of claim 114, which further comprises:

said server returning a second tag to the customer that is an advertisement message of the business, after the customer has registered with the server.

121. The method of claim 114, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

122. The method of claim 114, which further comprises:

said short-range wireless devices are implemented as IEEE 802.11 Wireless LAN devices.

123. The method of claim 114, which further comprises:

said short-range wireless devices are implemented as HIPERLAN devices.

124. The business method of claim 76, which further comprises:

establishing a queue of a plurality of customers waiting for service using a queuing management system program in the server, each customer having a mobile short-range wireless device;

sending a respective electronic tag data construct from at least two of said plurality of customers over a short-range wireless link to the access point, for registering the customer as being on a virtual queuing line established by the queuing management system program.

125. The business method of claim 124, which further comprises:

notifying a customer registered on said virtual queuing line that it is his/her turn in the queue, using said queuing management system program in the server.

126. The business method of claim 125, which further comprises:

said notifying being by a notification message sent over said short-range wireless link from said access point to the customer's mobile short-range wireless device.

127. The business method of claim 125, which further comprises:

said notifying being by a notification message sent over a network connected to said server, the notification message being sent via a second short-range wireless access point connected to the network, the second short-range wireless access point sending the notification message over a short-range wireless link to the customer's mobile short-range wireless device.

128. The business method of claim 125, which further comprises:

said notifying being by a notification message sent over a telephone network connected to said server, the notification message being sent via a cellular telephone access point connected to the telephone network, the cellular telephone access point sending the notification message over a cellular telephone wireless link to the customer's cellular telephone.

129. The business method of claim 128, which further comprises:

said notification message sent over the cellular telephone wireless link to the customer's cellular telephone is an SMS message.

130. The business method of claim 124, which further comprises:

said server returning a second tag to the customer that is an advertisement message of the business, after the customer has registered with the server.

131. The business method of claim 124, which further comprises:

said short-range wireless devices are implemented as Bluetooth devices.

132. The business method of claim 124, which further comprises:

said short-range wireless devices are implemented as IEEE 802.12 Wireless LAN devices.

133. The business method of claim 124, which further comprises:

said short-range wireless devices are implemented as HIPERLAN devices.

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